

In the matter of:)
)
Implementation of Sections 309(j) and 337 of) WT Docket No. 99-87
the Communications Act of 1934 as Amended)
)

WAIVER—EXPEDITED ACTION REQUESTED

The Washington Metropolitan Area Transit Authority (WMATA) requests a waiver of 47 C.F.R. §90.209(b)(5). Specifically, WMATA requests a waiver of footnote 3 of the table under paragraph (b)(5), which states, "All stations must operate on channels with a bandwidth of 12.5 kHz or less beginning January 1, 2013, unless operations meet the efficiency standard of §90.203(j)(3)." WMATA requests a waiver to allow operation in wideband (25-kHz) mode until July 1, 2015. At that time, WMATA's new narrowband UHF radio system should be fully operational.

Information regarding this request for waiver may be found in the attached document. This request has been prepared in accordance with the guidelines of FCC Public Notice DA 11-1189 released July 13, 2011.

This request was prepared prior to the passage of the Middle Class Tax Relief and Job Creation Act of 2012, which will require WMATA to vacate its T-band channels in approximately nine to 11 years. The Act did not address narrowbanding of T-band channels, so WMATA remains committed to its current plans for replacing the existing wideband system with a narrowband system by July 1, 2015. Should the FCC provide some relief of that deadline to T-band licensees, WMATA may choose to delay replacement of the current system while it seeks viable alternatives to meet its communications needs, especially the possibility of leasing system capacity on public-safety systems in the 700/800-MHz bands.

If you need any additional information, please feel free to contact me.

Sincerely Yours,

/s/ Marshall S. Epler

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Introduction

The Washington Metropolitan Area Transit Authority (WMATA) was created by an interstate compact in 1967 to plan, develop, build, finance, and operate a balanced regional transportation system in the National Capital Region. The Authority began building its rail system in 1969, acquired four regional bus systems in 1973, and began operating the first phase of Metrorail in 1976. Today, Metrorail serves 86 stations and has 106 miles of track. Metrobus serves the nation's capital 24 hours a day, seven days a week with 1,500 buses. Metrorail and Metrobus serve a population of 3.4 million within a 1,600-square mile jurisdiction. Metro began its paratransit service, MetroAccess, in 1994; it provides about 1.5 million trips per year.

To support its communications needs, WMATA owns and operates the Comprehensive Radio Communications System (CRCS), a 10-site, 22-channel Motorola SmartZone T-band trunked simulcast radio system under call signs WPVX365 and WPVX388. The CRCS is used by WMATA's Metropolitan Transit Police Department (MTPD) for law enforcement activities across the transit system (over 1,600 square miles), by the bus department to operate and maintain a fleet of 1,600 buses transporting in excess of 700,000 passengers a day, and by the rail department to operate and maintain 1,200 rail vehicles transporting in excess of 800,000 passengers a day.

Narrowbanding Efforts

In the spring of 2009, the WMATA Board of Directors approved \$20 million for the narrowbanding of the existing CRCS radio system.

WMATA entered into discussions with Motorola on what it would take to narrowband the existing radio system. Motorola informed WMATA that narrowbanding the existing system would result in a decrease in radio system coverage. An additional five sites would be needed to offset the reduction in coverage. However, the existing SmartZone system has a limitation of 10 simulcast sites. A new 15-site simulcast system would require replacement of 90 percent of existing site equipment.

WMATA intended to award a sole-source contract with Motorola for the procurement of the narrowband upgrade to the CRCS. Discussions with Motorola continued throughout the remainder of 2009 and into 2010. A preliminary design was developed and negotiations were underway to award a contract to Motorola to install the upgraded system. In mid-2010, it was determined that the CRCS narrowband upgrade would require more than the \$20 million already approved by the board.

In late 2010 and early 2011, WMATA management approached the Board of Directors with a request for a total of \$57 million for narrowbanding activities. Shortly after this request was submitted, Harris (Motorola's largest competitor) informed WMATA's legal team that they intended to protest WMATA's decision to award a sole-source contract for the narrowband upgrade to Motorola.

As a result of the threat of protest, WMATA issued a Request for Expression of Interest seeking companies willing to perform the narrowband upgrade. Three companies responded to the Request. Shortly afterward, in late summer 2011, WMATA's legal team directed that the CRCS narrowband upgrade be competitively procured.

In the fall of 2011, WMATA issued a task order to its consultant, AECOM, to develop a scope of work (SOW) to competitively procure the narrowbanding upgrade of the CRCS.

Early in 2012, the SOW was approved by WMATA engineering and sent to procurement for action. On February 13, 2012, WMATA issued an RFP to upgrade the existing CRCS infrastructure to a P25 Phase 2 radio infrastructure.

System Size and Complexity

The CRCS is a single-cell, 10-site, 22-channel, Motorola SmartZone 3.z simulcast trunked radio system operating in the 488-500 MHz band over a 1,600-square mile service area in the National Capital Region. Existing repeater sites are listed in Table 1. Existing dispatch sites are listed in Table 2. Channels are listed in Table 3. By the end of February 2012, the current CRCS will have redundant prime sites at JGB and CTF (currently operational) and the Master Site controller will be at CTF instead of JGB.

Table 1: Existing Repeater Sites

Number	Address	Location
1	6199 Old Arrington Lane Fairfax Station, VA	38-47-16.2 N 077-19-46.3 W
2	NW Corner 9th and Peabody Washington, DC	38-57-44.0 N 077-01-35.0 W
3	3900 Augustine St Alexandria, VA	38-44-41.0 N 077-05-56.0 W
4	11800 Sunrise Valley Dr Reston, VA	38-56-57.0 N 077-21-17.0 W
5	Horner Rd .37 mi West Dale City, VA	38-39-23.0 N 077-17-14.0 W
6	101 Monroe St Rockville, MD	39-04-59.4 N 077-08-57.9 W
7	600 5th St NW Washington, DC	38-53-54.0 N 077-01-04.0 W
8	Jericho Park & Lemmons Bridge Jericho Park, MD	39-00-53.6 N 076-46-17.8 W
9	8900 Greenwood Place Savage, MD	39-07-34.0 N 076-48-37.0 W
10	4700 Block Silver Hill Rd Suitland, MD	38-50-40.0 N 076-58-11.1 W

Table 2: Dispatch Centers

Number	Name	Attributes
1	Jackson Graham Building (JGB) 600 Fifth St NW Washington, DC	Current Master and Prime site
2	Carmen Turner Facility (CTF) 3500 Pennsy Drive Landover, MD	Backup prime site

Table 3: Channels

Base TX (MHz)	Base RX (MHz)
488.9875	491.9875
489.0875	492.0875
489.1625	492.1625
489.5125	492.5125

Base TX (MHz)	Base RX (MHz)
489.5375	492.5375
490.7625	493.7625
490.7875	493.7875
490.8375	493.8375
490.8625	493.8625
490.8875	493.8875
490.9125	493.9125
490.9375	493.9375
490.9625	493.9625
496.3375	499.3375
496.4375	499.4375
496.4625	499.4625
496.4875	499.4875
496.5125	499.5125
496.5375	499.5375
496.5625	499.5625
496.5875	499.5875
496.6125	499.6125

Narrowband Capabilities of Existing Equipment

The CRCS infrastructure can be configured for narrowband operation. However, the associated reduction in coverage would result in unreliable communications and unsafe operation of the transit system. Operation of the radio system with reduced coverage is an unacceptable safety hazard to WMATA. Therefore, WMATA does not consider narrowbanding the existing system to be a viable option.

Concurrent Upgrade Activities with Narrowband Effort

The planned upgrades to the CRCS include the following:

- The system will be upgraded to Project 25 (P25) Phase 2 (two-slot TDMA) standards.
- WMATA is in the process of extending its rail system to Dulles International Airport and beyond. WMATA will extend radio coverage to a five-mile buffer along the path of the new Dulles Rail Extension.
- WMATA's bus fleet currently uses the CRCS as the primary communication system for its automated vehicle location (AVL) system. WMATA is transitioning to commercial wireless services as the primary communication path and the CRCS as a secondary communication path for AVL.

Funding Summary

WMATA has secured approximately \$57 million dollars for funding the upgrade of the CRCS UHF radio system. Of this amount, about \$28 million will go toward infrastructure improvements, \$16 million will go to subscriber unit replacement or upgrade, and \$12 million will go to related costs such as engineering, program management, escorts, inspections and testing. See Table 4 for a detailed cost breakdown. All funding shown on the table has been approved and obligated to the project.

Table 4: Detailed Narrowbanding Project Cost Estimate

Item	Cost
Equipment	
Infrastructure	
Radio Equipment	\$15,737,700

Item	Cost
Physical Facilities	2,379,456
Consoles & Control Stations	2,997,555
Vendor Services	3,170,627
Recorder Upgrades	49,600
Independent Verification Testing	435,900
Coverage Testing	200,000
Spare - Radio Equipment	39,967
Spare - Infrastructure	250,979
Contingency	2,509,794
Training	228,000
Infrastructure Subtotal	27,999,579
Subscribers	
Bus Mobile Replacement	717,500
Bus Mobile Install	75,000
Bus Portable Replacement	572,500
Rail Mobile Replacement	700,000
Rail Mobile Install	100,000
Rail Mobile Upgrade	990,000
Rail Portable Replacement	1,050,000
SMNT Mobile Replacement	1,275,000
SMNT Mobile Install	1,275,000
SMNT Portable Replacement	625,000
SMNT Portable Upgrade	560,000
MTPD Mobile Replacement	175,000
MTPD Mobile Installation	35,000
MTPD Portable Replacement	2,400,000
MTPD Portable Upgrade	180,000
MISC Mobile Replacement	150,000
MISC Mobile Installation	30,000
MISC Portable Upgrade	67,500
Contingency	5,000,000
Subscribers Subtotal	\$15,977,500
Equipment Subtotal	\$43,977,079
WMATA Soft Costs	\$12,000,000
Project Total	\$55,977,079

Impact of WMATA's Narrowbanding Schedule on Co- and Adjacent-Channel Licensees

The CRCS is licensed on T-band channels (488-500 MHz) and has exclusive use on these channels based on its system loading (approximately 7,500 subscriber units). Since these channels are only available within a 50-mile (80-mile for mobile units) radius of Washington, D.C., there are few co-channel or adjacent-channel incumbents to WMATA's licensed channels. We have identified the following two incumbent adjacent-channel licensees:

Licensee	Call Sign	Frequency (MHz)	Emission Designator	ERP (W)	Grant Date
Firebird Ventures, LLC	WQLE968	496.4500	4K00F2D 4K00F7W	1000	01/04/2010

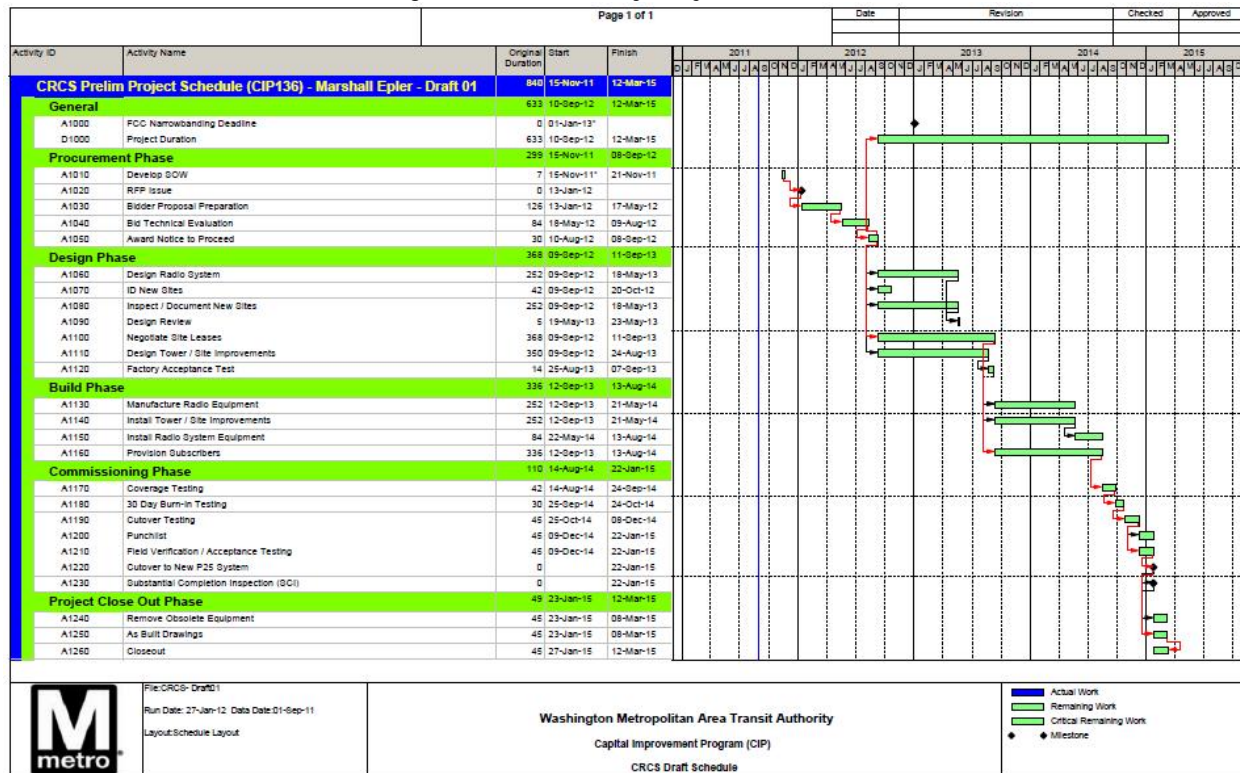
Licensee	Call Sign	Frequency (MHz)	Emission Designator	ERP (W)	Grant Date
Mobile Relay Associates	WQLB413	496.5000	4K00F2D 4K00F7W	250	11/20/2009

We are unaware of any interference issues between the CRCS and these incumbent systems. Because WMATA's request to extend its narrowbanding deadline does not involve an increase in transmitted power or bandwidth, grant of the waiver would have no effect on these or any other licensed systems.

Narrowbanding Project Schedule

A schedule of narrowbanding activities is shown in Figure 1. The Request for Proposals (RFP) was released on February 13, 2012 with a pre-bid meeting scheduled for March 12 and a May 25 proposal due date. Since government funding is being used to procure the infrastructure, the procurement is subject to strict and time-consuming procurement process. It is expected a contract for implementation of the system will be issued in September 2012 and that the project will take 30 months to complete. By January 1, 2013, the new system should be in the design phase. WMATA's narrowbanding schedule is not dependent upon the narrowbanding plans of other licensees.

Figure 1: Preliminary Project Schedule



Infrastructure Replacement Schedule

Once the procurement process has been completed and the contract has been awarded, the vendor will identify and assist WMATA in acquiring tower sites. It is expected that several additional sites will be required for a P25 Phase 2 infrastructure. Obtaining tower sites is a time-consuming process. It is expected the site acquisition will be the longest project activity. Concurrent with site acquisition activities, the manufacturer will design, manufacture, assemble and test the radio system infrastructure. Once the sites are acquired and facility improvements completed, the radio system infrastructure will be installed and tested. Upon successful testing of the infrastructure, WMATA will transition subscribers to

the new P25 Phase 2 radio infrastructure. It is expected that the P25 Phase 2 infrastructure will become operational in late 2014 with complete cutover to the new system by January 2015.

Subscriber Replacement Schedule

WMATA has an inventory of about 7,700 subscriber units. A detailed breakdown of WMATA's inventory is shown in Table 5. Of the current inventory, about 2,600 units are not capable of P25 operation and will have to be replaced. The remainder of the subscriber units can be upgraded to P25 operation. Replacement and reprogramming of subscriber units will be complete by August 2014, prior to infrastructure testing and cutover.

Table 5: Subscriber Unit Inventory

Type	Manufacturer	Model	Quantity
Portable	Motorola	APX7000	12
Mobile	Motorola	ASTRO SPECTRA	713
Mobile	Motorola	MCS2000	1908
Mobile	Motorola	XTL5000	1610
Portable	Motorola	XTS1500	903
Portable	Motorola	XTS3000	1536
Portable	Motorola	XTS5000	1040
Total			7722

Final Testing and Cutover

Testing and cutover to the new system should be complete by January 2015. To compensate for possible schedule slippage, we have requested that the waiver for wideband operations be extended to July 1, 2015. WMATA's FCC licenses will be updated as part of the project.

Conclusion

WMATA has acted diligently and in good faith to complete its rebanding activities before the narrowbanding deadline. WMATA's narrowbanding project began in early 2009 as a simple narrowbanding of the existing system, but because of the coverage issues identified, and the legal and procurement-related issues, it became far more complex than originally expected. The project as originally envisioned would easily have been completed by January 1, 2013 if all had gone according to the original schedule.

Section 1.925(b)(3) provides that waivers to FCC rules may be granted if:

"(i) The underlying purpose of the rule(s) would not be served or would be frustrated by application to the instant case, and that a grant of the requested waiver would be in the public interest; or
"(ii) In view of unique or unusual factual circumstances of the instant case, application of the rule(s) would be inequitable, unduly burdensome or contrary to the public interest, or the applicant has no reasonable alternative."

The intent of the narrowbanding mandate is to improve spectral efficiency in the land-mobile radio bands. By selecting P25 Phase 2 technology (6.25-kHz spectral efficiency), WMATA has a plan to improve its spectral efficiency beyond that required by the mandate (12.5-kHz spectral efficiency). There is no other alternative that can both support WMATA's communications needs and meet the narrowbanding deadline.

WMATA is responsible for efficient operation of National Capital Region transit systems transporting over a million passengers daily. WMATA is also responsible for providing public safety services to its

passengers and personnel. The public interest will be served, both in regards to meeting the FCC's ultimate goal of spectral efficiency and to providing for the public safety of WMATA's passengers, by grant of the requested waiver.